

REMARKS

In the event that this response does not place this application in a condition for allowance, then the Examiner is respectfully requested to contact the undersigned representative of the Applicant to arrange a telephonic interview concerning the inventive merits of the above identified application.

Initially, the Applicant thanks the Examiner for indicating that claims 40-44 and 47 and 48 are allowed, and also indicating that claims 33-36 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claim(s). In accordance with this indication, the combined subject matter of claims 33 and 45 is essentially rewritten as new independent claim 51 while claims 34, 35 and 36 are amended to be depend from this new independent claim 51. In view of such amendment, claims 51, 34, 35 and 36 are now believed to be allowable as well.

Further, although claim 38 is not indicated in the Official Action as being either rejected or objected to, that claim is identified, in paragraph 22 of the Official Action, as being allowable if rewritten in independent form. In accordance with this indication, the combined subject matter of claims 37, 38 and 45 is essentially rewritten as new independent claim 52 and this new independent claim is also believed to be allowable as well.

As a result of the above requested amendments, the pending claims are as follows: claims 27, 28, 30-32, 34-37, 40 and 42-52, of which claims 40 and 42-44 are allowed and claims 34-36 and 51 and 52 are directed to subject-matter indicated as allowable.

Turning now to the raise rejections, claims 32, 45, 46 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. '483 (United States Patent No. 6,218,483) in view of Luski et al. '369 (United States Publication No. 2003/0079369) and an article by Horinka; claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. '483 and Luski et al. '369 and further in view Grehardinger et al. '199 (United States Patent No. 5,714,199); claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. '483 '483, Luski et al. '369 and the article by Horinka and further in Bassett, Jr. '574 (United States Patent No. 3,355,574); claims 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. '483, Luski et al. '369 and the article by Horinka and further in Leach '576 (United States Patent No. 6,599,576) and claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. '483, Luski et al. '369 and Bassett, Jr. '574 (United States Patent No. 3,355,574) and further in view of De Jong et al. (book). The Applicant respectfully contests this basis of rejection

fundamentally in that there is nothing in Muthiah et al. '483 to motivate the skilled person to consider the disclosure of Luski et al. '369 and combine those disclosures with one another as alleged.

It is respectfully submitted that the object of Muthiah et al. '483 is to provide a coating powder for heat sensitive substrates (column 2, lines 6-7) and to provide a low temperature process for producing a smooth, low gloss coating on wood and other such substrates (column 2, lines 13-15). Although there is a reference to the possibility of using the method described for coating substrates such as "glass, ceramics, and graphite-filled composites as well as metallic substances such as steel and aluminum" (column 5, lines 10-12), that is to say to substrates that are "insensitive" to heat, it is respectfully submitted that the emphasis of Muthiah et al. '483's teaching, throughout the entire disclosure of that citation, is toward "the coating of heat sensitive substrates such as plastics, paper, cardboard and woods" (column 5, lines 13-14). Indeed, the specific methods described are all related to coating substrates of wood or wood composites (column 5, lines 51, 58-60, column 6, lines 2, 11 and 43 and column 7, line 31).

In paragraph 4 of the Official Action, the Examiner acknowledges that the disclosure by Muthiah et al. '483 relates wood substrate and notes that a glass substrate can be used. It is true, as identified above, that Muthiah et al. '483 does make reference to the possibility of using its teaching for coating glass (column 5, lines 10-11), but it is respectfully submitted that this reference is solitary and, moreover, is advanced only in the context of providing a listing of materials that contrast with the heat sensitive materials "such as plastics, paper, cardboard and woods" (column 5, lines 13-14) that are the focus of the Muthiah et al. '483's disclosure. The curing system taught by Muthiah et al. '483 is advanced as of "particular utility" in the coating of these particular heat sensitive materials making it "highly appealing as a commercially viable alternative to the liquid coatings" (column 5, lines 13-15). Those benefits of utility and commercial advantage result from the particular blend of thermosetting powder used and claimed by Muthiah et al. '483, in the context of heat sensitive materials. It is respectfully submitted that the same benefits are neither advanced nor obviously applicable in the context of glass or any of the other heat "insensitive" materials identified where low-temperature cure is not of relevance.

The Examiner—in relating the disclosure of Muthiah et al. '483 to the processes recited in claims 45 and 50—refers to the deposition of thermosetting powder on the upper surface of the substrate and the conveying of the Muthiah et al. '483 powder-coated substrate "to a curing oven having several heating zones that are heated by IR

lamps". However, Muthiah et al. '483 describes the curing oven as "having several heating zones, some of which are heated by IR lamps, others by heat convection, and still others by a combination of those two" (column 6, lines 16-19). That description is repeated with additional detail later as "[t]he oven may have several heating zones of the IR and convection types and also a combination of the two....A wooden panel bearing a coating powder of this invention may be cured in a gas-fired IR oven..." (column 6, lines 39-44). There is no information given as to the structure of a "gas-fired IR oven", but here again it would seem—as disclosed with column 6, lines 16-19—that the oven referred to has one or more distinct zones heated by gas and one or more others heated by IR, with possibly one or more heated by both. Even then there is still the absence of certainty and clarity as to the specific role of the IR in the multi-zone process described, and Muthiah et al. '483 certainly does not have any specific and unambiguous disclosure concerning the IR being used during the step of curing.

The only description by Muthiah et al. '483, concerning the role of the IR in the use of the "gas-fired IR oven" in the coating of fiberboard panel, is for "pre-heating" and "post-heating" the panel (column 6, lines 49-54), but nothing is described concerning the intermediate step of *curing the powder on the panel*, and by what form of heat is the specific step of curing is achieved. Moreover, the Applicant respectfully submits that there are critical distinctions between "preheating", as disclosed by Muthiah et al. '483, and curing, as claim by the presently claimed invention. That is, preheating typically does not induce any structural change in the thermosetting powder.

Accordingly, it is respectfully submitted that Muthiah et al. '483 does not clearly and unambiguously disclose the use of IR for curing the thermosetting powder, as specifically required by claims 45 and 50 of the present application, namely:

"a step of curing the thermosetting powder to form a coating on the first surface of the glass substrate, the step of curing the thermosetting powder comprising application of heat to the thermosetting powder from a source of infra-red radiation..." (see claim 45); or

"a step of curing, within an oven, the thermosetting powder deposited on the upper surface to form a coating on the upper surface of the glass substrate, the step of curing the thermosetting powder comprising application of heat to the thermosetting powder from a source of infra-red radiation..." (see claim 50).

The Examiner correctly recognizes that Muthiah et al. '483 is silent as to the further recited feature of claims 45 and 50, namely, that the infra-red radiation is applied via the lower surface of the specified glass substrate and, in an apparent attempt to

overcome this deficiency, cites the disclosure of Luski et al. '369 in support of the raised obviousness rejection.

As argued above, the entire emphasis, utility and commercial viability of the claimed and described blend of the thermosetting powder, according to Muthiah et al. '483, resides in the coating of heat sensitive materials, "such as plastics paper, cardboard and woods"; the same does not apply in regard to the coating of heat "insensitive" materials including glass. Accordingly, it is respectfully submitted that the question of whether it would have been obvious, under 35 U.S.C. 103(a), for a person having ordinary skill to have considered the teaching of Luski et al. '369 in the context of Muthiah et al. '483 requires consideration of what Luski et al. '369 teaches or adds, if anything, to the central focus of Muthiah et al. '483, to be obvious. The fact that Muthiah et al. '483 could be applied to glass, is clearly subsidiary to the prime focus of what Muthiah et al. '483 is concerned with, namely, a blend of thermosetting powder that is suitable for coating heat sensitive materials—of which glass is not a heat sensitive material.

Thus, it is respectfully submitted that a person of ordinary skill, considering the Muthiah et al. '483 teaching relating to a blend of thermosetting powder that is suitable for coating materials sensitive to heat, would not consider and would, in all probability, reject and discard the teachings of Luski et al. '369 as not being applicable to Muthiah et al. '483 unless what Luski et al. '369 taught was obviously applicable in the context of heat sensitive materials. To do otherwise would entail an effective mutilation of what is central to the objective of Muthiah et al. '483 and would, it is respectfully submitted, the contrary to applicable case law and would essentially result in an inventive process.

It is respectfully submitted that a person skilled in art, upon reviewing the teaching and disclosure of Luski et al. '369, would readily determined that such teaching and disclosure would be most unsuitable for use in the *coating of heat sensitive materials*. That is, Luski et al. '369 involves "back heating" of the substrate, that is to say applications where heat is applied to the material on the substrate *through the substrate*. Where, as in the case of Muthiah et al. '483, the substrate is heat sensitive, *it is respectfully submitted that the technique of having the heat applied to the substrate, by transmission through the substrate, is clearly unsuitable for a heat sensitive material from a practical point of view*. The thermal conductivities and other characteristics of heat sensitive materials are generally not suitable for their use as a substrate through which heat is to be transmitted without affecting the structure and support-capability of the substrate itself. Moreover, it is respectfully submitted that

exposure of a substrate of the heat sensitive materials that are identified by Muthiah et al. '483, namely, plastics, paper, cardboard and woods, to the "back heating" as taught by Luski et al. '369, could easily result in melting and/or burning and possibly the effective destruction of the substrate. With the Luski et al. '369 method, the very material (namely, that of the substrate) which in Muthiah et al. '483 is to be guarded against sustained full exposure to heat, is to be totally exposed to it.

In the above circumstances, therefore, it is respectfully submitted that it would not have been obvious for a person of ordinary skill in the art to combine the teaching of Luski et al. '369 with the teaching of Muthiah et al. '483 in the manner alleged by the Examiner. It is submitted that even in the context of Muthiah et al. '483's teaching, and against the reasoning advanced above that it would require inventive action, if the teaching of Luski et al. '369 were to be applied to a glass substrate, the result would not be in accordance with the recited features of claim 50 since Luski et al. '369 fails to in any way teach, suggest, disclose or remotely hint at maintenance of near-ambient temperature above the glass substrate within the oven.

The Examiner asserts that:

...one of ordinary skill in the art would have been able to optimize the temperature including the presently claimed "near-ambient temperature above the glass substrate" by routine experimentation.

Undoubtedly, one of ordinary skill in the art would have been able to act in this way, but there is an absence of teaching, suggestion, disclosure, motivation and/or reason to do so from anything to be found in the disclosures of Muthiah et al. '483 and/or Luski et al. '369. Both refer to overall temperatures of ovens or chambers *without any differentiation of environment temperature between different parts of the oven or chamber, and certainly no reference to temperature of an environment above the relevant substrate.* It is respectfully submitted that far from "routine experimentation" to maintain a near-ambient temperature above the glass substrate and such feature would require inventive action on the part of one skill in the art. Moreover, the only disclosure of such feature is found in the above identified application and, accordingly, the raised rejection appears to be merely the result of hindsight, which is improper.

In view of the above circumstances, it is respectfully submitted that it would require inventive action to combine the teaching of the cited references of Muthiah et al. '483 and Luski et al. '369 because the teaching of Luski et al. '369 has nothing of any obviously useful contribution to make to what Muthiah et al. '483 is seeking to achieve, namely, a coating powder and process for heat sensitive substrates, and that,

therefore, the methods of claims 45 and 50 are patentably distinguished over and from the cited art. Furthermore, even if it were obvious to combine the references—and the Applicant vehemently denies that this is the case—then it would not be obvious or a matter of “routine experimentation,” without invention, to arrive at the method recited in claim 50.

Since claims 27, 28, 30-32, 37 and 46 each depend from claim 45, those dependent claims, like claim 45, are all believed to be clearly patentable over the cited art in view of the above enumerated reasons.

Is respectfully submitted that similar comments apply with respect to independent claim 49, and thus that claim is believed to be also for at least the same reasons. That is, claim 49 includes in essence all the limitations of claim 45 and is thus, like claim 45, correspondingly patentable over the applied art.

The other cited art of Horinka (cited article), Gerhardinger et al (United States Patent No. 5,714,199), Bassett, Jr (United States Patent No. 355,574), Leach (United States Patent No. 6,599,576) and DeJong et al (cited book) are all been considered but it is submitted do not provide anything that in any way affects the distinctions drawn in the remarks made above.

The Applicant acknowledges that the additional references of Luski et al. '369, the article by Horinka, Grehardinger et al. '199, Bassett, Jr. '574, Leach '576 and De Jong et al. (book) may arguably relate to the feature(s) indicated by the Examiner in the official action. Nevertheless, the Applicant respectfully submits that the combination of the base reference of Muthiah et al. '483 with this additional art of Luski et al. '369, the article by Horinka, Grehardinger et al. '199, Bassett, Jr. '574, Leach '576 and/or De Jong et al. (book) fails to cure the above noted deficiencies of the base reference and thus still fails to in any way teach, suggest, disclose or remotely hint at the above distinguishing features of the presently claimed invention. As such, all of the raised rejections should be withdrawn at this time in view of the above amendments and remarks.

In the event that any further amendment to any of the claims of this application is believed or deemed necessary, then the Examiner is invited to contact the undersigned representative of the Applicant in order to discuss further amendment of the above identified application.

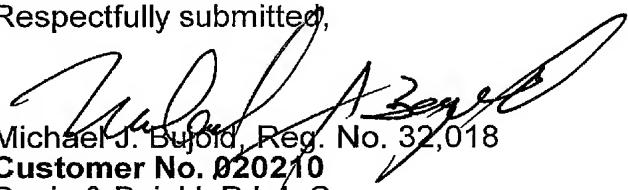
In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

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The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,


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